

CLAIMS

1. A hemostasis valve comprising:
 - a valve body having a proximal end for connecting to a first medical device and a distal end for connecting to a second medical device;
 - a first elongated chamber within said valve body, said first chamber having a first internal volume and being capable of receiving a medical instrument therein;
 - a collapsible member positioned within said valve body and defining said first elongated chamber;
 - a second elongated chamber extending about said first elongated chamber within said valve body, said second elongated chamber having an internal volume that is greater than said first internal volume; and
 - a pressure application system comprising a member moveable within said second elongate chamber for increasing the pressure within said second elongate chamber and sealing said collapsible member about a received medical instrument.
2. The hemostasis valve of claim 1 wherein said moveable member includes a plunger that is moveable relative to the valve body for reducing the interior volume within said second elongated chamber.
3. The hemostasis valve of claim 2 wherein a longitudinal axis of said plunger extends substantially parallel to a longitudinal axis of said valve body.
4. The hemostasis valve of claim 2 wherein a longitudinal axis of said plunger extends substantially perpendicular to a longitudinal axis of said valve body.

5. The hemostasis valve of claim 1 wherein said pressure application system further comprises a housing for said moveable member, said moveable member including a sealing member for cooperating with an inner surface of said housing to create a fluid tight seal between said housing and said moveable member.
6. The hemostasis valve of claim 5 wherein said moveable member includes an internal lumen for receiving an elongated member capable of carrying a medical instrument, said internal lumen includes a seal for creating a fluid tight seal with said elongated member.
7. The hemostasis valve of claim 6 wherein said elongated member includes an interior lumen aligned with the first chamber for receiving the medical instrument.
8. The hemostasis valve of claim 1 wherein moveable member can provide an infinite amount of pressure adjustments within said second elongated chamber.
9. The hemostasis valve of claim 1 wherein said second elongated chamber has a substantially hour glass shape.
10. The hemostasis valve of claim 9 wherein said valve body includes a housing, and wherein said substantially hour glass shaped member includes first and second bulbous sections that form a seal with an inner surface of the valve body housing.
11. A method of sealing a hemostasis valve about a medical instrument, said method comprising the steps of:
 - positioning a medical instrument within a first chamber in a valve body of the hemostasis valve;

advancing a pressure increasing element within a second chamber of said valve body, said second chamber surrounding at least a portion of said first chamber.